Ball Valves

3-Way Series

Pressures to 20,000 psi (1379 bar)

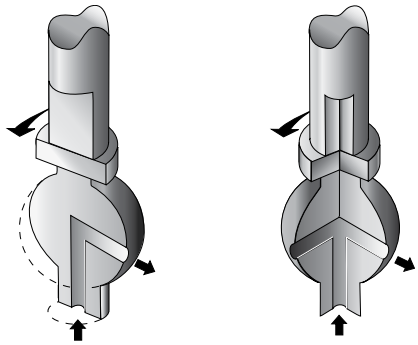
Parker Autoclave Engineers high-pressure ball valves have been designed to provide superior quality for maximum performance within a variety of valve styles, sizes, and process connections. Some of the more unique design innovations include an integral one-piece trunnion mounted style ball and stem that eliminates the shear failure common in two piece designs, re-torqueable seat glands that result in longer seat life, and a low friction stem seal that reduces actuation torque and enhances cycle life.

These ball valves can also be modified to incorporate the use of special materials, seals for high temperature applications, subsea models, and valve actuators.

When it comes to high-pressure applications, these ball valves with the associated high-pressure components, provide the critical performance demanded by the high pressure market.



Flow Configuration



3-Way Switching 180° Turn

3-Way Crossover 90° Turn

Ball Valve Features:

- One-piece, trunnion mounted style, stem design eliminates shear failure found in two piece designs and reduces effects of side loading.
- Re-torqueable seat glands for longer seat life.
- Carbon filled PEEK seats offer excellent resistance to chemicals, heat, and wear/abrasion.
- Full-port flow path minimizes pressure drop.
- 316 cold worked stainless steel construction.
- Low friction pressure assisted graphite filled PTFE stem seal increases cycle life and reduces operating torque.
- Available in 90° turn diverter and 180° turn switching models.
- Viton o-rings for operation from 0°F (-17.8°C) to 400°F (204°C).
- Optional o-rings available for high-temperature applications.
- Optional wetted materials.
- Wide selection of tube and pipe end fittings available.
- Electric and pneumatic actuator options.

Applications:

- Laboratories
- Test Stands
- Control Panels
- Chemical Research
- Pilot Plants
- Water Blast Pumping Units
- High volume chemical injection skids.

Parker

Autoclave Engineers

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Ball Valves - 3-Way Series

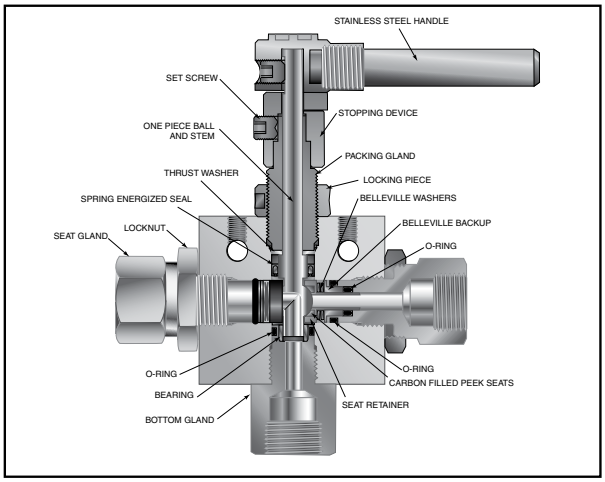
Ball Valves - 3/16" 3-Way Series

Pressures to 20,000 psi (1379 bar) .187" (4.77mm) Orifice

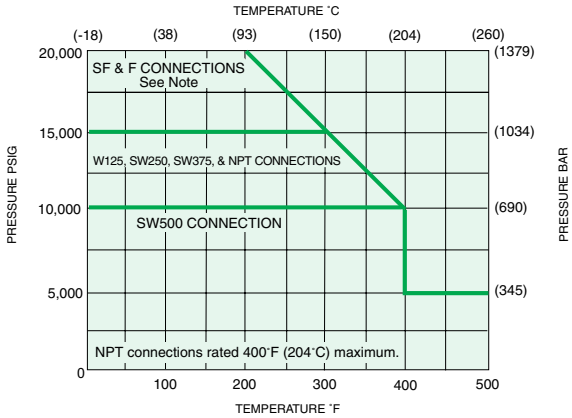
Connection	MAWP @ Room Temperature	Minimum Orifice inches(mm)
W125	15,000 psi (1034 bar)	.094 (2.39)
SW250	15,000 psi (1034 bar)	.128 (3.25)
SW375	15,000 psi (1034 bar)	.188 (4.77)
SW500	10,000 psi (690 bar)	.188 (4.77)
SF250CX20	20,000 psi (1379 bar)	.109 (2.77)
SF375CX20	20,000 psi (1379 bar)	.188 (4.77)
SF562CX20	20,000 psi (1379 bar)	.188 (4.77)
F250C	20,000 psi (1379 bar)	.094 (2.39)
F375C	20,000 psi (1379 bar)	.125 (3.17)
F562C	20,000 psi (1379 bar)	.188 (4.77)
1/8" NPT	15,000 psi (1034 bar)	.188 (4.77)
1/4" NPT	15,000 psi (1034 bar)	.188 (4.77)
3/8" NPT	15,000 psi (1034 bar)	.188 (4.77)
1/2" NPT	15,000 psi (1034 bar)	.188 (4.77)
	Valve C_V=.50	

MAWP: Maximum Allowable Working Pressure
C_V listed is for maximum orifice size of .188 inches only.
Consult factory for C_V of valves with reduced orifice sizes.





PRESSURE TEMPERATURE RATINGS



Pressure ratings are determined by the end connections chosen, see chart.
Note: Maximum side connection inlet pressure 15,000 psi (1034 bar)

NOTE: Ball valves are not recommended for critical gas applications such as Hydrogen, Helium or other small molecular gases.

Ordering Procedure

For complete information on available end connections and material options, see next page. 3-way ball valves are furnished complete with tube or pipe connections.

Typical catalog number: **3B 3 S 20 M9 — XXX**

3B — **Valve Series**
3B: 3-way
3BD: 3-way diverter

3 — **Ball Orifice Diameter**
3-3/16"
(4.77 mm)

S — **Material**
S -316SS
(For material options contact factory)

20 — **Pressure (X 1000 psi)**

M9 — **End Connection**
M9 - SF562CX20
(See Chart on next page)

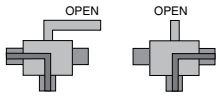
XXX — **Options**
HT - High Temperature
(Ball Valve Actuators, see next page)

All general terms and conditions of sale, including limitations of our liability, apply to all products and services sold.

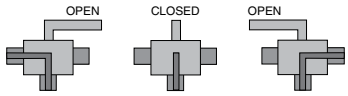
End Connection Options

Catalog Number	End Connection Number	Connection	MAWP @ Room Temperature	Hex Inches(mm)
3B3S15L2 3BD3S15L2	L2	W125	15,000 psi (1034 bar)	1 (25.40)
3B3S15L4 3BD3S15L4	L4	SW250	15,000 psi (1034 bar)	1 (25.40)
3B3S15L6 3BD3S15L6	L6	SW375	15,000 psi (1034 bar)	1 (25.40)
3B3S10L8 3BD3S10L8	L8	SW500	10,000 psi (690 bar)	1 (25.40)
3B3S20M4 3BD3S20M4	M4	SF250CX20	20,000 psi (1379 bar)	1 (25.40)
3B3S20M6 3BD3S20M6	M6	SF375CX20	20,000 psi (1379 bar)	1 (25.40)
3B3S20M9 3BD3S20M9	M9	SF562CX20	20,000 psi (1379 bar)	1 (25.40)
3B3S20H4 3BD3S20H4	H4	F250C	20,000 psi (1379 bar)	1 (25.40)
3B3S20H6 3BD3S20H6	H6	F375C	20,000 psi (1379 bar)	1 (25.40)
3B3S20H9 3BD3S20H9	H9	F562C	20,000 psi (1379 bar)	1.38 (35.05)
3B3S15P2 3BD3S15P2	P2	1/8" NPT	15,000 psi (1034 bar)	1 (25.40)
3B3S15P4 3BD3S15P4	P4	1/4" NPT	15,000 psi (1034 bar)	1 (25.40)
3B3S15P6 3BD3S15P6	P6	3/8" NPT	15,000 psi (1034 bar)	1 (25.40)
3B3S15P8 3BD3S15P8	P8	1/2" NPT	15,000 psi (1034 bar)	1.38 (35.05)

See ball valve option/detail section for end connection details, material, and high temperature options.



*3-Way Diverter Valve
90° Turn



3-Way Ball Valve
180° Turn

*The Diverter Valve design permits inlet flow through the bottom port. Outlet flow may be diverted to either valve side port.

Ball Valve Options

Pneumatic Actuator:

AO - Air-to-open/Spring to close (diverter style only)
AC - Air-to-close/Spring to open (diverter style only)
AOC - Air-to-open-and-close (double action)

Electric Actuator:

EO1 - 120 volt AC 50/60 Hz
EO2 - 220 volt AC 50/60 Hz
EO3 - 24 VDC

Actuator Operating Temperature:

Pneumatic: 0˚F to 175˚F (-17˚C to 79˚C)
Electric: 0˚F to 160˚F (-17˚C to 71˚C)

High Temperature Option:

HT - for media temperature up to 500˚F (260˚C)

Valve Maintenance

Repair Kits: add "**R**" to the front of valve catalog numbers for proper repair kit. (Example: **R3B3S**)

Consult your Parker Autoclave Engineers representative for pricing on repair kits. Refer to the Operation and Maintenance manual for proper maintenance procedures.

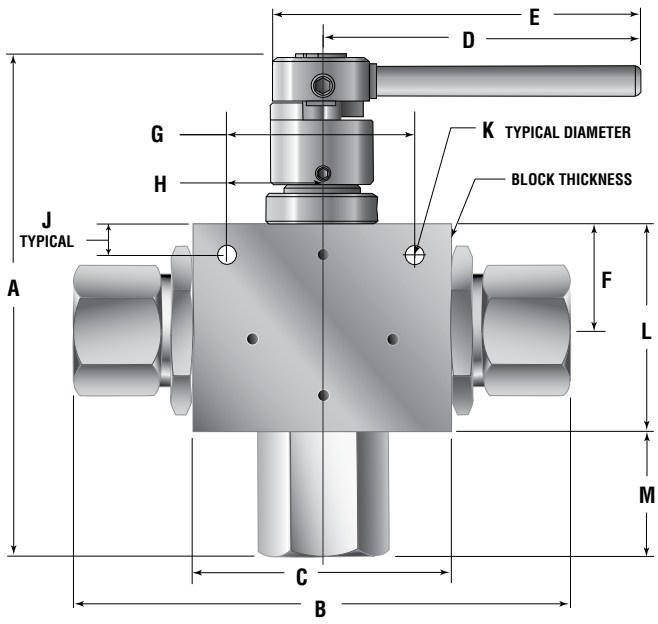
See ball valve actuator section for full description, additional information, and options.

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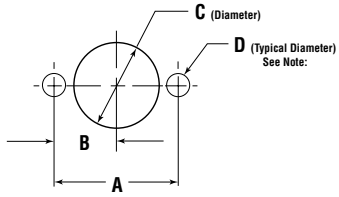
Ball Valve Dimensions - inches (mm)

	VALVE MODELS		
	3B3S/3BD3S	3B6S/3BD6S	3B8S/3BD8S
A	5.64 (143.35)	6.55 (166.37)	7.83 (198.79)
B	4.72 (119.94)	5.74 (145.79)	7.77 (197.36)
C	2.50 (63.50)	3.00 (76.20)	4.13 (104.78)
D	3.37 (85.55)	4.99 (126.82)	5.12 (130.04)
E	3.90 (99.02)	5.52 (140.32)	10.25 (260.35)
F	1.13 (28.58)	1.38 (34.93)	1.66 (42.16)
G	1.50 (38.10)	2.00 (50.80)	3.00 (76.20)
H	0.75 (19.05)	1.00 (25.40)	1.50 (38.10)
J	0.43 (10.92)	0.41 (10.31)	0.50 (12.70)
K	0.28 (7.11)	0.28 (7.11)	0.28 (7.11)
L	2.25 (57.15)	2.88 (73.03)	3.34 (84.94)
M	0.97 (24.64)	1.19 (30.22)	1.70 (43.18)
Block Thickness	1.00 (25.40)	1.38 (34.92)	1.75 (44.45)



Ball Valve Panel Mounting Dimensions - inches (mm)

	VALVE MODELS		
	3B3S/3BD3S	3B6S/3BD6S	3B8S/3BD8S
A	1.500 (38.10)	2.000 (50.80)	3.000 (76.20)
B	0.750 (19.05)	1.000 (25.40)	1.500 (38.10)
C	1.06 (26.92)	1.50 (38.10)	1.88 (47.63)
D	0.28 (7.11)	0.28 (7.11)	0.28 (7.11)



All dimensions are for reference only and are subject to change without notice.
Note: Body mounting 1/4" - 20 thread

WARNING

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